REMARKS

Claim 1, 3-13, and 15-17 are rejected under 35 USC 101 because the claimed invention is directed to non-statutory subject matter because the claimed method provides a conditional statement wherein only one of the conditions satisfies the statutory requirements. The claims do not guarantee that the count value ever reaches the threshold value and therefore under conditions when the count value does not reach the threshold value, the claimed method only carries out the manipulation of threshold values. Applicant's attention is further directed to MPEP §2106 with respect to the examples of claimed processes that do not achieve a practical application.

Applicant has amended claims 1 and 13 to change the conditional word "if" to the definite word "when". In this way, as will be explained below, the claims do guarantee that the count value reaches the threshold value. Applicant notes that although the current Office action (mailed 2006/10/26) is FINAL, the above-described modification to claims 1 and 13 should not necessitate a new search or otherwise change the scope of the claims over what was previously examined by the Examiner. In particular, the claimed invention of claims 1 and 13 focuses on a method of timing utilizing an imprecise timer. (See preamble of claims 1, 13 for example.) In order to time the event, the alarm value is generated. Such claim language should be found to be statutory because it is very similar to the following example of a statutory process claim taken from MPEP section 2106:

> "A method of curing rubber in a mold which relies upon updating process parameters, using a computer processor to determine a time period for curing the rubber, using the computer processor to determine **when the time period has been reached** in the curing process and then opening the mold at that stage." (emphasis added, MPEP section 2106)

The MPEP does not indicate that the phrase **when the time period has been reached** does "not guarantee that the count value ever reaches the threshold value and therefore under

conditions when the count value does not reach the threshold value, the claimed method only carries out the manipulation of threshold values." In other words, the conditions that the time period is not reached and the mold is not opened are not important to this example of a statutory claim process – even though if these conditions ever occurred only manipulation of the process parameters would take place. Applicant therefore asserts that using the phrase "when the count value reaches the threshold value" in the present invention claims 1 and 13 should be sufficient to render claims 1 and 13 statutory process claims.

Applicant further asserts that this amendment to claim 1 and 13 should be viewed as only correcting wording formalities in the claims and should be permitted even though the current Office action is FINAL. The reason no new search is required is because the Examiner has already focused on the conditions where the claims do guarantee that the count value reaches the threshold value for search and examination purposes. Therefore, said amendments to the claims are simply correcting wording formalities of the claims and are not changing the scope of the claims with respect to what the Examiner previously examined. Additionally, as will explained, applicant believes that the amended claims are allowable over the cited references and therefore the above-described amendment should place the application in a position of allowance over the cited references. Withdrawal of the 35 USC 101 non-statutory subject matter rejections of claims 1, 3-13, and 15-17 is respectfully requested. Further comments regarding the patentability of claims 1 and 13 with respect to the cited references is provided below.

Claims 1, 3, 5, 12, 18-20, 22, and 29 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,084,441 to Kawai in view of US Patent No. 6,141,296 to Progar

Applicant asserts that claims 1, 3, 5, 12, 18-20, 22, and 29 should not be found unpatentable over Kawai in view of Progar because there is no motivation to combine the teachings of Kawai and Progar.

Concerning obviousness type rejections, MPEP section 2142 states, "The tendency to

resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." Additionally, MPEP section 2143.01 states, "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." The same MPEP sections also provide the following reminders concerning 35 USC 103 obviousness type rejections:

1. "FACT THAT REFERENCES CAN BE COMBINED OR MODIFIED IS NOT SUFFICIENT TO ESTABLISH PRIMA FACIE OBVIOUSNESS"
2. "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE"
3. "THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE"

The Examiner stated in the Office action of 07/26/2006 that "It would have been obvious to one having ordinary skill in the art to modify the invention of Kawai to specify that the actual time interval between each of the reference events is used to calculate a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals, as taught by Progar, **because while the invention of Kawai only calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the invention of Kawai by providing repeated updating of the count value to provide increased and continuous accuracy, while also allowing more precise updating and overall operational efficiency through the determination and accumulation of fraction error values over user desired time intervals (column 1, lines 41-53, column 5, lines 1-17 and column 5, line 59 to column 6, line 4)**" (emphasis

added)

The motivation as provided by the Examiner is bolded for convenience in the above quotation. Applicant asserts that the Examiner utilized hindsight to justify the above motivation given the teachings of the present invention because a combination of the teachings of Kawai with the teachings of Progar, although perhaps being possible, would render the Kawai prior art unsatisfactory for its intended purpose and would thereby change the principle of operation of the Kawai reference. In particular, applicant notes that the teachings of Kawai at col 1, lines 24-29 state, "One data processing apparatus has both a quartz-crystal oscillator and an RC oscillator, and employees the quartz-crystal oscillator when higher oscillation accuracy is required and employees the RC oscillator when a clock timer operates at a low rate that does not require high oscillation accuracy." As specifically illustrated in Fig.1, Fig.2, and Fig.3 of Kawai, a first basic clock signal from a quartz crystal oscillator 11 and a second basic clock signal from an RC oscillator 12 going into a clock selector 13 to thereby select a system clock signal. According to Kawai, a two step process is utilized to calibrate the system; see abstract stating, "When the first basic clock signal is selected as the system clock signal, the second basic clock signal is measured with the system clock signal. When the second basic clock signal is selected as the system clock signal, a numerical value up to which the clock pulses of the system clock signal are counted is corrected on the basis of the measured second basic clock signal."

However, if modified according to the motivation of the Examiner quoted above, the Kawai reference would need to be modified to no longer perform the two step calibration method as taught. In fact, no calibration would be required whatsoever. That is because the Examiner is stating that a person skilled in the art would be motivated by Progar to modify the Kawai system to no longer calibrate the second basic clock signal in a first stage but to instead simultaneously utilize both the first and the second basic clock signals while the system is in operation to "**providing repeated updating of the count value to provide increased and continuous accuracy while also allowing more precise updating and overall operational efficiency through the determination and accumulation of fraction**

error values over user desired time intervals" (stated motivation by Examiner in Office action mailed 07/26/2006)

Applicant notes that in this way, the Kawai reference would need to be completely redesigned without maintaining any of its original calibration functionality. For example, why would one need to do a two step calibration process if repeated updating of the count value would provide increased and continuous accuracy according to the Examiner. In this way, applicant asserts that the Examiner has unfairly used hindsight to find that there is a motivation by Kawai and Progar to combine their teachings to result in the present invention. In particular, applicant asserts a person skilled in the art having access to only the teachings of Kawai and Progar would not be motivated to combine said references because it would totally change the functionality of Kawai. Kawai teaches calibrating the system so that "When the second basic clock signal is selected as the system clock signal, a numerical value up to which the clock pulses of the system clock signal are counted is corrected on the basis of the measured second basic clock signal" (see abstract). The intended purpose of operation of Kawai involves only utilizing the second basic clock single when the clock timer operates at a low rate that does not require high oscillation accuracy (col 1, lines 27-29). The principle of operation is therefore the calibration method as disclosed. However, according to the Examiner's motivation for combination, the original purpose and principle of operation of Kawai are abandoned to instead produce the benefits as disclosed by the present invention. Additionally, without using the present invention as a reference, it is not obvious how the teachings of Progar would even be beneficially combined with Kawai since the design of Kawai would need to be somehow totally changed to no longer perform its original calibration process. For at least these reasons, applicant respectfully asserts there is no motivation to combine the teachings of Progar with the teachings of Kawai to result in the present invention as claimed. Reconsideration of claims 1, 3, 5, 12, 18-20, 22, and 29 and removal of the Finality of the present Office action (mailed 07/26/2006) is respectfully requested.

Claims 13, 15, 17, 30, and 34 are rejected under 35 USC 103a as being unpatentable over US Patent No. 4,903,251 to Chapman in view of US Patent No. 6,141,296 to Progar

Applicant asserts that claims 13, 15, 17, 30, and 34 should not be found rejected as being unpatentable over the teachings of Chapman in view of Progar because there is no motivation to combine said references. The argument of why there is no motivation is very similar to that provided above for the Kawai in view of Progar rejection and is therefore summarized here more briefly.

In short, applicant asserts that the Examiner unfairly utilized hindsight to find that there was a motivation for a person skilled in the art to combine Chapman and Progar to result in the present invention. The Examiner stated "It would have been obvious to one having ordinary skill in the art to modify the invention of Chapman to explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals, as taught by Progar, because while the invention of Chapman calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the invention of Chapman by providing repeated updating of the count value to provide increased and continuous accuracy, while also allowing more precise updating and overall operation efficiency through the determination and accumulation of fraction error values over user desired time intervals".

However, applicant points out that such a motivation directly conflicts with the teachings of Chapman in col 2, lines 16-21 stating, "Furthermore, the calculations required to apply error correction to the programmable register value and the need to correct for inaccuracies each and every second increases the processor overhead associated with use of the Luitje technique to an undesirable level." And in col 2, lines 31-34 stating, "It is a further object of the invention to reduce microcomputer processing time overhead associated with correction of time-of-day measurement." It is therefore a principle of operation of Chapman that "Storage portion 32 stores the number 6144 which is the count number corresponding to the ideal performance of crystal oscillator 11. EEPROM 34 contains an error value which

corresponds to the parts per million error in the crystal oscillator frequency." Additionally, Chapman teaches in col 6, lines 39-43, "Since the calibration or test signal generated by the microcontroller 10 is generated only during production testing, interference of the test signal with audio signals or other signals within electronic system 60 during normal operation is avoided. Furthermore, the correction factor determination is fully automated and can be integrated with the normal production testing performed on electronic system 60. Therefore, no significant added expense is realized in providing accurate time keeping."

Applicant points out that the above quoted teachings are only a few of the teachings of Chapman that specifically teach against combining the portions of Progar that the Examiner utilized to reject the present invention as being obvious. Chapman specifically teaches and explains the benefits of only storing one calibration value in an EEPROM during production testing. Therefore, a person skilled in the art would not be motivated to ignore these teachings and instead "updating the count value according to a value being dynamically calculated by accumulating a plurality of actual time intervals corresponding to a plurality of reference events", as is claimed in claim 13 of the present invention. For at least this reason, applicant asserts that claims 13, 15, 17, 30, and 34 should not be found rejected as being unpatentable over the teachings of Chapman in view of Progar because there is no motivation to combine said references. Reconsideration of claims 13, 15, 17, 30, and 34 and removal of the Finality of the present Office action (mailed 07/26/2006) is respectfully requested.

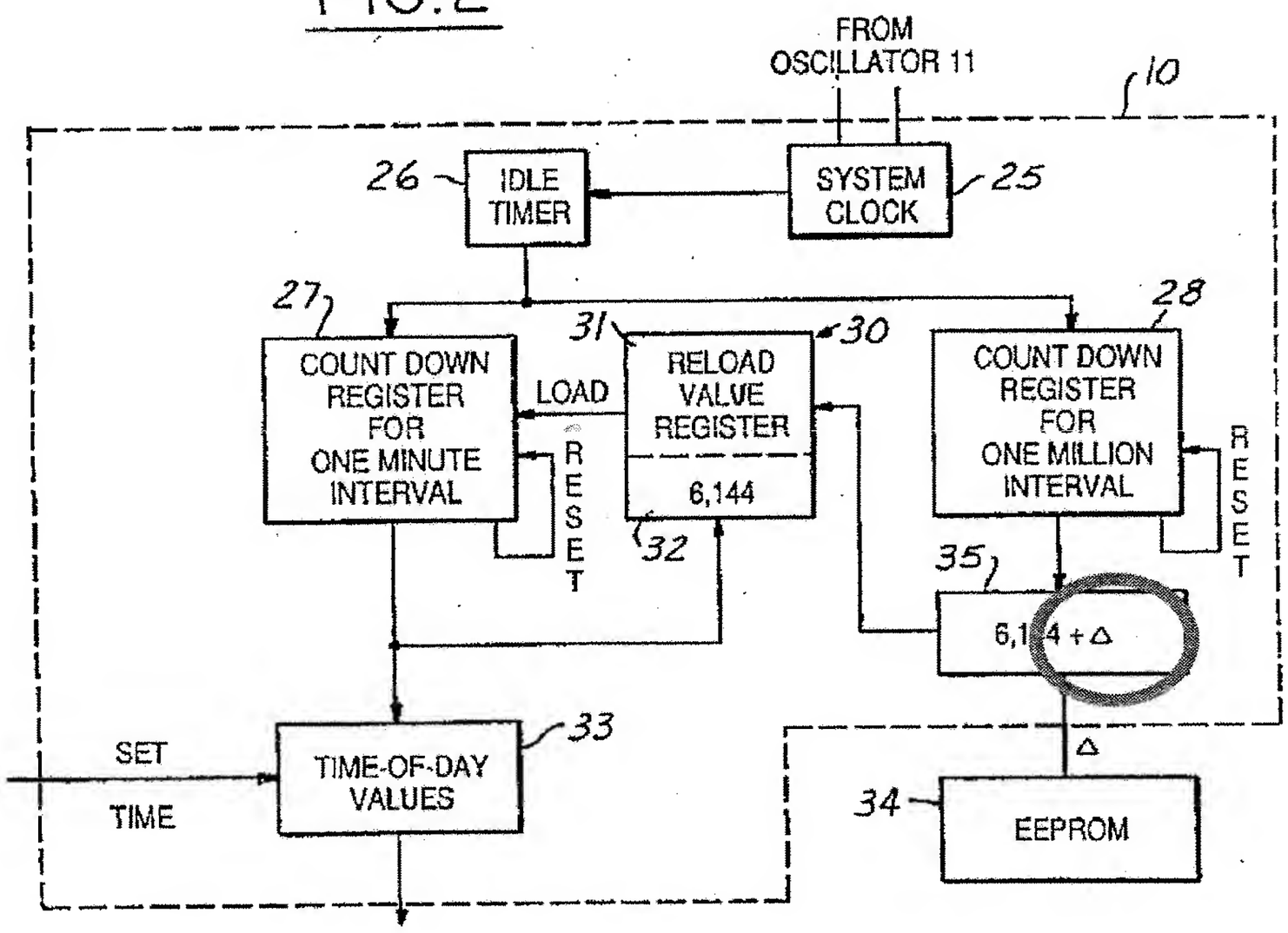
Additionally, the applicant would like to point out some of the differences between the cited references and the present invention with respect to the result that would occur if the cited references were combined.

combination does not explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals.

Progar teaches a time-of-day clock assembly having means for correcting imprecision of a timer repeatedly triggering interrupts (column 1, lines 4-7 and column 3, lines 25-37) comprising tracking an actual time interval between each of

On page 16, the Examiner states that Progar teaches the imprecision of a timer. From this statement, it is apparent that the Examiner has a slight misunderstanding regarding the differences between a timer and a clock. Factually speaking, Progar only teaches calibrating the imprecision of a clock, and does not teach anything about timers. Such is expressed below:

FIG.2



From Chapman

Microprocessor **12**, upon receiving the output signal from accumulator **22**, also selectively and temporarily increments the threshold value of register **20** by one, thereby requiring register **20** to count a whole number of 1832 interrupt signals before generating the next signal to register **27**, thereby causing the clock assembly **10** to temporarily "run slower", thereby selectively correcting the accumulated fractional error deficiency which is substantially equal to the threshold value of register **22**. The next signal is then generated by use of 1831 interrupt signals. In another embodiment, microprocessor **12** performs this "incrementation" by re-initializing register **20** to a value of 1,832. Alternatively, microprocessor **12** may increment the value of register **20** by one. In the foregoing manner, system **10** selectively compensates for fractional error deficiencies and provides for an accurate time-of-day clock.

From Progar (Col 5, lines 43-58)

From these two methods, it is apparent that they teach approximately the following with respect to our method:

Assuming each 1831 units is 1sec, and the clock is not accurate, every 5 seconds there will be 1 sec of error. Therefore, for first 4 seconds we count 1831times, the 5th second of time, we will **reload or reinitializing the register**, the setting number then becomes 3662(2*1831) units afterwards will make 1 second of "increment", which will compensate the clock every 5 seconds having 1 second of error.

An example is:

(1) 1831 → increment 1 sec.

(2) 1831 → increment 1 sec.

(3) 1831 → increment 1 sec.

(4) 1831 → increment 1 sec.

(5) 3662 → increment 1 sec.

The below method is what the Examiner claims shows Progar teaching our method of accumulating a plurality of actual time intervals:

> to a value being dynamically calculated by accumulating a plurality of actual time intervals, as taught by Progar, because while the invention of Chapman calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the

From OA (page 10)

However, it is totally not suitable that they would teach our method for an **imprecise Timer.** The reasoning is explained below:

An imprecise clock has one clock base, however, a timer will have many different tasks, with every task each having a different clock base. Therefore, if the cited references teach our method for a timer, it is not suitable for the following reasons:

Utilizing the same example as above, let's assume timer units of 1831 is equal to 1 second. Further, assuming this timer is not accurate so that each 5 seconds includes 1 second of error. Assuming the timer is interrupted every 1 second on time, this will mean

each 1 second will enter a timer function to thereby check if there are any tasks that need to be executed. At the same time, assume that our timer function needs to be able to handle 5 tasks. These 5 tasks are separated into tasks A, B that require 2 seconds to execute one time (for example, to check whether or not a particular flag is set…), task C is required to be executed every 4 seconds, task D is required to be executed every 8 seconds, and task E is required to be executed every 10 seconds.

The above described difference in the clock base in this example is the 2sec, 4 sec, 8sec, 10sec etc. Specifically, the threshold A, B = 2, threshold C = 4, threshold D = 8, threshold E = 10.

Utilizing the teachings of Progar and Chapman, our method would result in the following:

count = 0

(1)1831 → 1 sec → timer interrupt issue → count = count + 1

(2)1831 → 1 sec → timer interrupt issue → count = count + 1

(3)1831 → 1 sec → timer interrupt issue → count = count + 1

(4)1831 → 1 sec → timer interrupt issue → count = count + 1

(5)3662 → 1 sec → timer interrupt issue → count = count + 1

(6)1831 → 1 sec → timer interrupt issue → count = count + 1

(7)1831 → 1 sec → timer interrupt issue → count = count + 1

(8)1831 → 1 sec → timer interrupt issue → count = count + 1

(9)1831 → 1 sec → timer interrupt issue → count = count + 1

(10)3662 → 1 sec → timer interrupt issue → count = count + 1

(11)1831 → 1 sec → timer interrupt issue → count = count + 1

.....

when count >= threshold, it will execute the task.

Assuming this is only one clock base, utilizing the teachings of Progar and Chapman

teach, our method has no problem performing calibration because in this example it is calibrated every 5 seconds. Therefore, the error will not continuously accumulate. However, utilizing a timer, each epoch might be processed according to a different clock based task. In the above example this would mean that except for task E, the processing times of the other tasks will actually not be accurate. For example when count= 4, Task C will be executed, however, at this time the actual passed time may be 4.8sec. That is, the actual result is not the desired execution of the task every 4 seconds.

As explained previously, combining Progar with Chapman actually conflicts with the teaching of Chapman. However, even if the two references are combined, the obvious result would actually be as was just explained not as was stated by the Examiner. Concerning the Examiner's comments stating "It would have been obvious to one having ordinary skill in the art to modify the invention of Chapman to explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals, as taught by Progar……", applicant asserts such statement is only achieved by utilizing hindsight on the part of the Examiner.

Claims 16 and 33 are rejected under 35 USC 103a as being unpatentable over Chapman and Progar and further in view of US Patent No. 3,889,189 to Lode

Claims 16 and 33 are dependent on claims believed allowable over the cited references as stated above. For at least these reasons, applicant asserts claims 16 and 33 should also be found allowable. Reconsideration of claims 16 and 33 is respectfully requested.

Claims 1, 3, 5, 9, 11-13, 15, 17-20, 22, 26, 28-32, and 34 are rejected under 35 USC 103a as being unpatentable over US Patent No. 4,896,321 to Kawahara in view of US Patent No. 4,903,251 to Chapman and in further view of US Patent No. 6,141,296 to Progar

Applicant asserts that claims **1, 3, 5, 9, 11-13, 15, 17-20, 22, 26, 28-32, and 34** should

not be found rejected as being unpatentable over the teachings of Kawahara in view of Chapman and further in view of Progar because there is no motivation to combine said references. The argument of why there is no motivation is very similar to that provided above for the Chapman in view of Progar rejection. In brief, as shown above, Chapman specifically teaches against the combination with Progar. The Examiner is only relying on the Kawahara reference for a few elements ("repeatedly triggering a reference event according to a predetermined time interval", "storing a threshold value", storing a count value corresponding to a plurality of reference events generated from the timer / counter, and "generating an acknowledgement event if the count value reaches the threshold value". (see rejection by Examiner in Office action mailed 07/26/2006) All the remaining limitations of the independent claims of the present invention rely upon the combination of the Chapman and Progar references as determined by the Examiner. However, applicant has already shown above that Chapman specifically teaches against such a combination with Progar and there is therefore no motivation to combine said references. For at least this reason, applicant asserts that claims 1, 3, 5, 9, 11-13, 15, 17-20, 22, 26, 28-32, and 34 should not be found rejected as being unpatentable over the teachings of Kawahara in view of Chapman and further in view of Progar. Reconsideration of claims 1, 3, 5, 9, 11-13, 15, 17-20, 22, 26, 28-32, and 34 and removal of the Finality of the present Office action (mailed 07/26/2006) is respectfully requested.

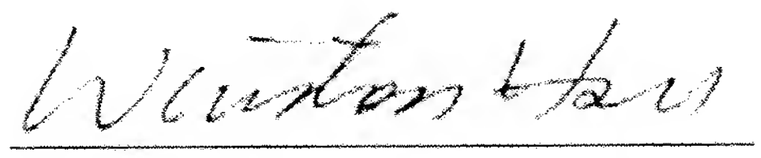
Claims 4, 16, 21, and 33 are rejected under 35 USC 103a as being unpatentable over Kawahara in view of Chapman and Progar and further in view of US Patent No. 3,889,189 to Lode

Claims 4, 16, 21, and 33 are dependent on claims believed allowable over the cited references as stated above. For at least these reasons, applicant asserts claims 4, 16, 21, and 33 should also be found allowable. Reconsideration of claims 4, 16, 21, and 33 is respectfully requested.

Claims 6 and 23 are rejected under 35 USC 103a as being unpatentable over Kawahara in view of Chapman and Progar and further in view of US Patent No. 4,374,358 to Hirose

Claims 6 and 23 are dependent on claims believed allowable over the cited references as stated above. For at least these reasons, applicant asserts claims 6 and 23 should also be found allowable. Reconsideration of claims 6 and 23 is respectfully requested.

Sincerely yours,



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Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)